

WHAT IS CLAIMED IS:

1. A fiber array housing a stripped fiber in a V-groove of a V-groove substrate comprising;

5 a fiber fixing substrate fixing the stripped fiber;

a peripheral adhesive B disposed around the stripped fiber;

wherein an end face of the peripheral adhesive B is recessed with respect to an end face of the fiber.

10 2. The fiber array according to claim 1, wherein a recess depth x that the end face of the peripheral adhesive B is recessed with respect to the end face of the fiber is related to a water absorption ratio ϕ of the peripheral adhesive and a length over which the optical fiber is adhered to the V-groove by the equation $x = 0.1 \times (\phi \times L) / 2$.

15 3. The fiber array according to claim 1, wherein a recess depth x that the end face of the peripheral adhesive B is recessed with respect to the end face of the fiber is at least $0.1 \mu\text{m}$.

20 4. The fiber array according to claim 2, wherein a recess depth x that the end face of the peripheral adhesive B is recessed with respect to the end face of the fiber is at least $0.1 \mu\text{m}$.

25 5. The fiber array according to any one of claims 1 to 4, wherein the end face of the fiber is flush with the end face of the fiber array or protrudes therefrom.

30 6. The fiber array according to any one of claims 3 or 4, wherein the end face of the peripheral adhesive B is recessed at most $10 \mu\text{m}$ from the end face of the fiber array.

7. The fiber array according to any one of claims 1 to 4, wherein the peripheral adhesive B has a Young's modulus of at least 0.03GPa.

8. A method for fabricating a fiber array in accordance with claim 1 wherein the end face of the peripheral adhesive B is recessed with respect to end faces of the fibers, comprising:

after polishing an end face of the assembled fiber array, ashing or etching the end face at which the end of the peripheral adhesive B and the end face of the fiber are located.

9. An optical device that is connected/fixed to a fiber array according to any one of the claims 1 to 4.